



Abstract

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PI Title:

Project Title: GENDER RELATED DIFFERENCE IN VISCERAL SENSITIVITY IN IBS

Abstract: DESCRIPTION: Based on clinical studies, women are more likely than men to experience a variety of chronic, recurrent visceral pain syndromes such as interstitial cystitis or irritable bowel syndrome (IBS). However, in contrast to well-characterized sex differences in animal models, experimental evidence to support gender differences in human pain perception remains inconclusive and mechanisms remain poorly understood. Potential mechanisms that may underlie gender-related differences in perception of visceral pain included fixed sexual dimorphism of brain regions concerned with central processing of noxious stimuli, and transient hormone-related cyclic modifiers of central pain processing. Since women are more likely than men to experience pain affecting pelvic viscera during copulation, pregnancy and labor, it is hypothesized that women exhibit differences in at least two type of responses to potential harmful sensations arising from the pelvic organs: altered activation of endogenous pain inhibition systems and altered attentional processes including hyper-vigilance. In the current proposal, the investigators will test the general hypothesis by determining gender-related differences in healthy control subjects and in IBS patients using H21502 PET imaging of the brain together with measurement of perceptual, autonomic, and neuroendocrine responses to noxious rectosigmoid stimulation. They will utilize two visceral stimulus paradigms based on previous work, one tests visceral sensitization from sigmoid colon conditioning and the other anticipatory responses to expected high and low intensity visceral sensation. This will allow for direct comparison of perceptual and sensory gender-related factors in IBS. The investigators will also separately examine stable, non-hormonal factors (in women on oral contraceptives) and hormonal factors (in ovulating women during the luteal and perimenstruation periods).

Thesaurus Terms:

gender difference, hormone regulation /control mechanism, irritable bowel syndrome, neural information processing, pain, perception

autonomic nervous system, behavioral habituation /sensitization, brain mapping, brain scanning, cingulate gyrus, conditioning, menstrual cycle, neuroendocrine system, pons, stimulus /response, thalamus

clinical research, human subject, longitudinal positron emission tomography, questionnaire

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